

## 2004 Maryland Wild Turkey Observation Survey Summary

The Maryland Department of Natural Resources (DNR) conducts 2 annual wild turkey observation surveys, often referred to as “brood surveys.” The primary purpose of these surveys is to estimate wild turkey reproductive success throughout the state. Additional information can also be obtained from the surveys regarding recent range expansions and relative densities of turkeys in the western region. Like most game birds, turkey populations are very dependent on reproduction to add new “recruits” to the fall population. Reproductive success, or productivity, is highly variable and depends on many factors such as weather conditions during nesting and brood-rearing periods, the physical condition of nesting hens, and predator populations. Regional and statewide turkey populations, harvest rates, hunter success, and age structure of the population are all influenced greatly by annual poult production, making this survey an important monitoring tool.

### Statewide Survey

*Survey Methodology.*- A statewide turkey observation survey has been conducted in Maryland since 1993. Within the DNR, survey forms are given to all Wildlife and Heritage Service field staff, as well as interested State Forests and Parks, Natural Resource Police, and Forestry personnel. Additionally, survey forms are distributed to interested hunters, landowners, and citizens. The survey period is June 1 through September 15 and participants are asked to record the county and number of hens, poults, and gobblers seen for each sighting. This survey is most useful to estimate reproduction, but provides little information on turkey densities because the number of participants varies considerably from year to year. While county-specific reproductive estimates may be more useful, many counties lack an adequate number of observations, making the results unreliable. Therefore, results are summarized by Physiographic Regions, areas of the state that share similar forest types, topography, weather conditions, and demographics.

*Results.*- Turkey productivity, as indexed by the number of poults seen per adult hen, was average or above-average throughout most of Maryland (Table 1). The Ridge and Valley (Allegany and Washington counties) and the Coastal Plain Regions of the state showed the highest productivity with 4.5 and 4.3 poults per hen, respectively. Average productivity was noted Garrett county (Appalachian Plateau Region, 3.2 poults per hen), but the Blue Ridge (3.4) and Piedmont Region (1.2) indices were slightly below average. It should be noted that the Blue Ridge, Piedmont, and Appalachian Plateau estimates of productivity are typically based on much smaller samples than the other regions, making definitive conclusions in those areas more difficult.

Overall, over 77% of hens were seen with broods, suggesting excellent nesting success (Table 3). Last summer, which was one of the worst reproductive seasons on record, only 44% of hens were seen with broods. Average brood size was also significantly larger this year (10.3 vs. 6.6). The data suggest that turkeys experienced good nesting success and high poult survival, resulting in increased numbers of young turkeys likely “recruited” into the population. However, nesting success appeared to be variable among regions. Only about ½ of the hens observed in Garrett county and the Piedmont region had a brood, whereas nearly 80% of hens in the Ridge and Valley and Coastal Plain regions were seen with poults (Table 2).

The high productivity seen this year was much needed; production the previous 2 years has been well below average in much of the state. Anecdotal reports and spring harvest data suggest that turkey numbers have slipped in the past year or 2, but this years “crop” of young birds will should boost populations to record high levels once again in most of the state.

## **Western Region Survey**

*Survey Methodology.*- A similar, but more intensive survey is conducted in the western region counties of Garrett, Allegany, and Washington. The purpose of this survey is to estimate productivity and also determine the density of turkeys in the region where fall turkey hunting is permitted. Knowledge regarding reproduction is important, but it does not provide information on the actual number of turkeys present. This survey was initiated in 1996 and participants not only record the same data as the statewide survey, but also record the number of miles traveled per month. To further control the accuracy and consistency of the data, only turkeys seen and the number of miles driven while “on duty” are recorded. With knowledge of the number of miles driven, we can estimate the relative density of turkeys in the region and detect changes over a given time period. A selected group of observers participate in the survey, mostly comprised of DNR field staff.

*Results.*- Productivity in the Western Region was estimated to be at a record high level in 2004 (Table 4). A productivity index of 4.7 poults per hen was observed, similar to the high production found in 2001 and well above the average of 3.1 poults per hen. Over 80% of hens observed were seen with broods, suggesting most hens nested successfully. Poult survival also appears to have been exceptional. A record high of 14.4 poults was observed per brood (Note that broods from different hens that travel together are counted as 1 brood). The data suggest that Washington and Allegany experienced better reproductive conditions than did Garrett county.

The number of turkeys seen per 1,000 miles driven rose to a record high of 14.4. This represented an amazing 150% increase from the 5.7 turkeys seen per 1,000 miles in 2003. Turkeys are known to be exceptionally resilient birds and this year proves that they will rebound quickly under the right conditions. Although overall numbers still appear to somewhat depressed in Garrett county, this year’s productivity should boost populations significantly. The survey results also confirm that Allegany and Washington county continue to be strongholds for turkeys in western region.

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## STATEWIDE TURKEY OBSERVATION SURVEY RESULTS, 2004

**Table 1. Wild turkey production estimates (poults per hen) by physiographic region.**

Physiographic Region <sup>1</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Previous 5-year Average	Long- term Average
Appalachian Plateau	5.8	3.8	2.1	3.4	3.7	4.2	1.7	4.0	2.8	1.5	3.2	2.8	3.2
Ridge and Valley	6.1	3.9	2.6	2.8	2.9	3.8	3.5	5.6	4.9	3.1	4.5	4.2	4.0
Blue Ridge <sup>2</sup>	7.0	No Data	2.7	No Data	2.5	3.1	1.3	5.0	6.6	1.0	3.0	3.4	3.6
Piedmont <sup>2</sup>	2.5	3.4	4.0	2.6	2.4	2.5	3.3	2.4	3.1	1.2	1.7	2.5	2.6
Coastal Plain	7.3	4.7	3.1	3.7	2.6	2.2	2.2	3.3	1.7	1.5	4.3	2.2	3.5

<sup>1</sup> Physiographic Regions are defined as:  
 Appalachian Plateau – Garrett  
 Ridge and Valley - Allegany, Washington  
 Blue Ridge - Frederick west of Rt. 15  
 Piedmont - Baltimore, Carroll, Cecil, Frederick east of Rt. 15, Harford, Howard, Montgomery  
 Coastal Plain - Anne Arundel, Calvert, Caroline, Charles, Dorchester, Kent, Prince Georges, Queen Annes, St. Mary's, Somerset, Talbot, Wicomico, Worcester

<sup>2</sup> Estimates typically derived from small sample, results may not be representative of entire region

**Table 2. 2004 wild turkey observation survey results by physiographic region.**

Physiographic Region	No. of Observations	Hens	Poults	Gobblers	Unknown	Total	% Brood Hens <sup>1</sup>	Poults per Hen	Poults per Brood Hen	Poults per Brood
Appalachian Plateau	40	42	135	17	42	236	52.4	3.2	6.1	7.9
Ridge and Valley	138	222	997	80	104	1403	79.3	4.5	5.7	12.0
Blue Ridge <sup>2</sup>	12	16	48	8	0	72	68.8	3.0	4.4	8.0
Piedmont <sup>2</sup>	15	18	31	7	1	57	44.4	1.7	3.9	3.9
Coastal plain	360	442	1885	300	381	3008	80.3	4.3	5.3	10.1

<sup>1</sup> Brood hen = A hen with poults  
<sup>2</sup> Small sample; results may not be representative of entire region

**Table 3. 2004 wild turkey observation survey results by month.**

Month	No. of Observations	Hens	Poults	Gobblers	Unknown	Total	% Brood Hens	Poults per Hen	Poults per Brood Hen	Poults per Brood
June	197	194	715	174	46	1129	62.9	3.7	5.9	8.8
July	183	253	1021	120	141	1535	78.3	4.0	5.2	9.8
August	119	195	916	77	143	1331	90.8	4.7	5.2	11.6
September	66	98	444	41	198	781	76.5	4.5	5.9	12.0
All months	565	740	3096	412	528	4776	77.3	4.2	5.4	10.3

## WESTERN REGION TURKEY OBSERVATION SURVEY RESULTS, 2004

**Table 4. Western region wild turkey observation survey results, 1997-2004.**

	1997	1998	1999	2000	2001	2002	2003	2004	Previous 5-year Average	Long- term Average
No. of Observers	15	15	17	17	17	14	13	17	16	15
No. of Broods	51	43	75	42	50	44	26	63	47	49
No. of Hens	174	125	178	119	120	187	85	173	138	147
No. of Poults	443	365	658	265	567	425	201	812	423	458
No. of Turkeys	709	494	1015	512	844	768	332	1087	694	719
No. Miles Driven	81595	73019	91410	86821	84170	65587	58002	75635	77198	76915
Poults per Brood	8.7	8.5	8.8	6.3	11.3	9.7	7.7	12.9	8.8	9.2
Poults per Hen	2.6	2.8	3.7	2.2	4.7	2.3	2.4	4.7	3.1	3.1
Broods per 1,000 Miles Driven	0.6	0.5	0.8	0.5	0.6	0.7	0.5	0.8	0.6	0.6
Turkeys per 1,000 Miles Driven	8.7	6.8	11.1	5.9	10.0	11.7	5.7	14.4	8.9	9.3

**Table 5. 2004 western region wild turkey observation survey results by month.**

Month	No. of Observers	Poults per Hen	Poults per Brood Hen <sup>1</sup>	Poults per Brood	% Brood Hens	Broods per 1,000 miles	Turkeys per 1,000 miles
June	17	3.6	4.9	9.8	74.4	0.8	10.1
July	17	5.1	6.2	11.1	82.9	0.9	12.3
August	17	5.2	6.0	17.3	86.8	0.7	15.1
September	17	4.7	6.3	14.1	75.0	1.1	24.7
All Months	17	4.7	5.8	12.9	80.3	0.8	14.4

<sup>1</sup> Brood Hen = A hen with poults